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## SYLLABUS OF LECTURES

ON

# Medical Jurisprudence,

BY

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THE most important of the public duties of medical men is to aid in the administration of justice. Medical Jurisprudence teaches us how to perform this duty. Often neglected, because not often required. But, *note*, when required it is vitally important :—

1st. To the community, that justice be done.

2d. To individuals, whose rights are in question.

3d. To the witness and his profession ; for the duty being performed in public, if it be ill done, the individual and his profession are both disgraced.

Some suppose that if a man possess a fair knowledge of physic, surgery and obstetrics he will make a good witness. *Not so*. He must not only have the knowledge but know how to use it.

Doctors are apt to be bad witnesses, for two reasons :—

1st. They usually testify to matters of opinion ; and few men have their opinions definite and clear.

2d. They dislike to say, "*I do not know*."

To be a good witness, study to know *accurately* what you claim to know ; and if you have not such knowledge, say so at once. Say, I don't know. You rather gain than lose by this.

*Hints to Medical Witnesses :—*

1st. Prepare yourself by looking over the best authorities.

2d. Till you have done this, do not commit yourself to any opinion.

3d. Never allow your feelings to be interested in the result of the case. Plaintiff and defendant, should to you be algebraic quantities.

4th. Never consider what is to be the effect of your testimony. See only that it is true and clear.

5th. Avoid technicalities.

6th. Keep your temper; never blame a lawyer for sifting your evidence, nor for trying to puzzle you: it is his business. Never bandy words or jokes with him; you lose dignity by so doing, and very generally get worsted in the "keen encounter of your wits."

7th. Never let your answer go beyond the question. If there is any thing you wish to explain, reserve it and address it to the judge.

8th. Treat the court with special deference: better exceed than fall short.

9th. Always speak respectfully of those from whom you differ.

10th. Never speak slightly of the authorities that may be quoted against you.

11th. Talk the case over, in a friendly spirit, with the other medical witnesses; and see if you cannot all agree.

#### INSANITY.

Competency of medical men to speak as experts in cases of insanity. This is often denied. Kant always insisted that the question of sanity or insanity belonged rather to metaphysics than to medicine.

Others have asserted that medical men have no better means of forming an opinion at least in certain cases, than other persons. Dictum of Lord Denman in *Reg. vs. Oxford*. Obvious fallacy of this opinion. The competency of medical men is decided affirmatively if we admit that insanity is a disease of the body. Is it so?

*Psychic Theory of Insanity*:—Insanity is a disease of the mind, for

1st. There is no peculiar lesion of the brain uniformly connected with insanity. In many cases no structural disease of the brain was discovered.

2d. Many insane persons live long and enjoy good bodily health.

3d. Insanity is often cured by moral means.

4th. The causes of insanity, both predisposing and exciting, are such as act on the mind.

To these specious reasons we object:—

1st. Though no peculiar lesion can be named as pathognomic of insanity, this only proves that our knowledge of the disease is imperfect. As to the cases where no lesion was discovered in the brains of those long insane, it may be that a lesion existed though it was not discovered.

2d. Apparent health is, as we all know, consistent with serious organic disease.

3d. If insanity is cured by moral means exclusively, so is gout, ague, &c.

4th. So as to its being caused by mental emotions: the same is true







of amenorrhœa, and other diseases. Such are some of the objections to the psychic theory of insanity.

*Somatic Theory*:—Insanity is a disease of the body, for

1st. Lesions of the brain are found in the vast majority of cases.

2d. Insanity is often caused by agents which have a direct influence on the organic life of the brain, as insolation, drunkenness, &c.

3d. It often results from mechanical injury of the brain. One form (idioey) is always associated with malformed brain.

These considerations, to which others might be added, satisfy me of the truth of the somatic theory of insanity. That view is nearly universal in England, France, and America.

Insanity becomes the subject of *legal investigation* in three classes of cases:

1st. Where it is attempted to deprive an individual of his civil rights and invalidate all his civil acts.

2d. Where the validity of some one act—as marriage, a will, &c.—is questioned.

3d. Where insanity is pleaded as a defense in criminal trials.

In all these cases, the law seeks to define insanity; and as though this were not difficult enough, it has one standard for the first class of cases, and another for the third—so that a man has been hanged as sane, after he had been deprived of his property as insane.

*Legal test of sanity*: Knowing right from wrong. Answer of the twelve judges to the House of Lords. Fallacy of this test.

*Definition of insanity*: A satisfactory definition impossible. The best I can give. Insanity is a disease of the brain, by which the freedom of the will is impaired.

*Terms* employed to indicate the disease. “Lunaey”—from supposed influence of the moon. “Insanity”—unsoundness. “Mental alienation”—the best term; as teaching us to compare the man—not with others, still less with any arbitrary standard—but with himself.

*Objections to these terms*:

1st. Lunaey—Even as pointing to the paroxysmal character of the disease: in many cases paroxysms do not occur.

2d. Insanity—Utterly vague.

3d. Mental alienation—Some have never been other than what they are; yet this is the best term.

*Classification of the Insane.*

Lord Coke's. No value.

Esquirol. 1. Mania; 2. Monomania; 3. Dementia; 4. Idioey.

A simpler division of these cases, as they result in

1. *Mental feebleness.*

2. *Mental derangement, or disorder.*

The first, Want of Energy; second, Misdirected Energy.

Under mental feebleness, I comprehend Idioey, Imbecility, Dementia, Amentia. Under mental derangement or disorder, Mania, whether

general or partial (monomania), whether it affect the ideas or the moral nature.

IDIOCY; *Imbecility, Dementia, Amentia.*

Here every thing is question of degree. The one state passing into the other by gradations too slight for scientific distinction. I treat of all these cases as various degrees of *Idiocy*.

*Idiocy of the lowest degree*—usually congenital, and accompanied by mis-shapen head. Esquirol held that idiocy, of this degree, was not a disease but a condition, in which the intellect, never having been developed, could not be cultivated. This idea is now generally abandoned.

*Symptoms:* Head small and usually mis-shapen; sometimes non-symmetrical, as are the limbs, the eyes; face large, dull and pale; lips thick; cheeks flabby; stature small; spine often deformed; joints large; limbs distorted; muscles soft and deficient in power; some cannot stand, others cannot walk, or totter and stagger as they go; senses very imperfect, sight indistinct, taste weak, speech wanting, great tendency to utter inarticulate sounds. Little sense of pain. Some have no natural instinct, and will not eat unless food is put into the mouth. Others have the animal instinct strong, especially lust and gluttony.

*Causes:* Congenital malformation; and in a few cases, a sudden mental shock, or long-continued mania.

*Second, ascending, degree of idiocy.* The physical peculiarities absent or slight; senses at worst dull; speech confined to a few words. Animal instincts strong; passions furiously violent. Affections sometimes strong, but not constant. Memory weak. Vanity often excessive. Walk slow, but not tottering.

*Causes*—Sometimes congenital; often follows mania, or results from Onanism; old age.

*Third, ascending, degree of Idiocy*—Here we distinguish the two varieties named by Hoffbauer, *Imbecility* and *Stupidity*.

*Imbecility.*—Range of ideas wide, but view always indistinct. Attention is wanting, and hence memory weak: nothing is remembered, because nothing has been clearly apprehended or so considered as to be stamped on the mind. The imbecile is timid, self-distrusting, seeks support, desires to be guided. The body is often weak.

*Stupidity.*—Mind lacks range; only part of a subject is seen. Man narrow-minded, has few ideas, reasons from few premises, is very self-confident, never troubled by doubt or fear, obstinate, self-willed. Propensities often vicious; some have little or no moral sense.

*Causes.*—Old age, especially where the bodily strength is retained. This third degree of idiocy often puzzles judges, juries, and medical witnesses. In examining such persons, inquire—

1. As to hereditary taint. This form of insanity is often transmitted. If the taint exists, In what degree? As to transmission—

*Note*—(1.) That boys inherit from the father; girls from the mother. (2.) Children born after the parent has been insane, are most likely to inherit the disease.

2. Look to the physical signs: size and shape of head; character of





the face; the eye; the gait; look for tremor of the muscles, restlessness.

3. Test the memory: the knowledge of figures, and of the value of money.

4. Test the affective faculties: are the likes and dislikes violent? are they causeless, irrational?

5. Are the passions violent,—senseless rages?

6. Look to the physiognomy: the cunning leer, the unmeaning stare, the dull lack-luster eye, the mouth constantly moving, mumbling; silly smile, inarticulate cries.

7. Observe the posture: is it loonnging? the gait irregular, or slow?

8. Examine the skin: is it dry, dark brown, or deeply sallow? rough? the perspiration offensive?

All these are rarely found; but all are very rarely absent.

**DISORDER OF THE MENTAL FACULTIES**—Comprehending mania and monomania, moral or intellectual. These I put together, as they are not different diseases—still less diseases of different parts of the mind, but different modes in which the disease of the brain manifests itself.

These modes are four.

I. The mental disease is manifested whenever the mind acts; all the faculties give evidence, more or less decisive, of the mental disorder. This state is termed General Mania.

II. The mental disorder shows itself only when the mind acts in one particular way, or upon some one subject. This is Monomania or partial insanity. *Note*.—The mind hath no parts, and its faculties are not parts of it, but particular modes of acting—illustration from walking, running, &c.

III. All or nearly all of the affective faculties may show disorder, though the operations of the intellect do not. This is General Moral Insanity.

IV. The mental disorder may appear in a blind unreasoning impulse to commit some particular kind of crime—Partial Moral Insanity.

All these are not different diseases, but different modes or circumstances under which the mental disorder manifests itself. Usually, however, the disorder is seen in more than one of these four modes—often in all of them. Examine thoroughly, and this will be discovered.

*General Mania*. Here, in strictness, the disorder should be manifested in all the workings of the mind. This is rarely so. It is almost always more manifest in some than in other mental operations. Thus general passes into partial insanity.

*Symptoms. Period of Incubation*. Importance of this period. Its symptoms, not being generally known, are not often feigned. Their presence is strong proof of insanity; their absence, not so strong.—*Period sometimes short*, then we note, pain or uneasiness in the head; hand often put to the head; heat of head, rare. Sleeplessness, bad dreams, constant restlessness, anxiety about trifles, bursts of causeless

anger. *Period long.* Then, general malaise; loss of interest in life; sleeplessness; change of habits, tastes, feelings, even language; mind confused—Grouch; some timid or listless; others violent; dyspepsia, constipation, eye never steady; look sidelong and stealthy. *Developed disease.* *Illusions*, i. e., false perceptions, and *Hallucinations*, i. e.—supposed perceptions not excited by any sensible object, are now common. Illustrations of each. These may not deceive the patient—he can correct them; this power soon lost. Struggles to retain it—struggle ceases; he lives in these delusions. If they strongly excite the mind, agitation most violent; entire loss of sleep; furious excitement in some, wild eye, hot skin, dry tongue; others, nothing of this. If the delusion merely occupy the mind, all is quiet; yet habits and objects of interest are changed. Moral nature usually changed: affections change their object.

*Paroxysmal character of mania.* In some quite regular; usually, not so. Some have so-called lucid intervals. Difference between the legal and the medical definitions of lucid interval. Exact state of the mind in these lucid intervals: It is a period of the disease, not a recovery; and careful examination will detect proofs of existing disease. Are they good witnesses at such times, especially as to facts occurring during previous paroxysms? Doubtful. Cases illustrative. Rape sworn to.

*Diagnosis.* Mania the form of insanity usually feigned. To detect it, note:—

- 1st. Does hereditary taint exist? On which side?
- 2d. Have premonitory symptoms existed?
- 3d. What interest has the patient in being thought insane?
- 4th. How does he sleep? Is insomnia pretended? Give a strong opiate in food.
- 5th. What is the physiognomy? Eye, &c.?
- 6th. Does he not over-act? Pretending to complete loss of memory is suspicious; as such loss is rare in the insane.
- 7th. Are not the symptoms of mania and idiocy jumbled together?

*Monomania.* In strictness the patient is apparently sane on all subjects but one. Such cases (if they exist) very rare. Usually the insanity is manifested on more than one subject, and often, when the one subject is touched the mind loses balance on all others for a time. Some have one item of insane belief. Cases. Others rave upon one class of subjects—e. g., religion. In some the insane belief depends on physical disease. Cases.

Note—The physical disease does not cause the insanity; it only directs the insane belief to some special object.

*The Phrenological Theory of Monomania.* Objections to its. True view: The mind is an undivisible whole. As such it is diseased; but it is necessary to recur to some particular subject to make the existing disease obvious.

*Diagnosis.* Monomania rarely feigned. Responsibility of monomaniacs. Legal doctrine: He is responsible unless the criminal act flowed directly from the insane belief. This presumes that part of the







mind is sound, part unsound; and, if the act flowed from the sound part he is responsible. This all false; the mind of man a unit; as such it is sound or unsound. We may detect this unsoundness by one test only or by fifty, it matters not. The question is, does unsoundness exist? Is he sane? Or insane? That is a medical question; but as to his being responsible to the law, that is a purely legal matter, on which the medical witness should never give an opinion.

*Moral Insanity.* Here the disease (insanity) is manifested by insane conduct. The ideas, opinions, &c. are sound; judgment, memory, perception normal; but the conduct is mad. Cases: McGinnis, in Ray, p. 181; Lord Audley; King of Prussia.

To distinguish these cases of disease from depravity, always difficult, sometimes impossible, *note* :—

1. Hereditary taint.
2. Indications of a stage of incubation.
3. Marked change in conduct or character, especially if connected with bodily disease.
4. Are there paroxysms of restlessness or fury?
5. As to the criminal act, is it motiveless? Was there any attempt to escape?

Second form of moral insanity: A senseless tendency to commit one crime.

Here, insanity existing, it is discoverable only by one form of wrongdoing :—

*Kleptomania*: Propensity to steal. Case of New York lady: Intellect appears sound, judgment clear, no insane belief, no loss of memory; *she would steal*.

*Pyromania*: Propensity to acts of incendiarism.

*Homicidal Monomania*: Cases illustrative: in some a blind, furious thirst for blood; in others a calm, quiet determination to kill some one.

To distinguish such cases from criminal homicide, note in the patient any symptoms of insanity,—hereditary taint, disordered bodily health, change of character, moodiness, causeless gaiety, &c.

In the act note, is it motiveless? How is it avowed? Illustrative cases.

#### INFANTICIDE.

The killing of a new-born child. Killing usually immediately after birth,—sometimes not for several days. Proofs the same as in other cases, except that there must be proof of life; the law presuming still birth till the contrary is proved.

Questions for the medical jurist. The body being found. As to the child:

1. Does the development correspond with the period of utero-gestation?
2. Was it born alive?

3. How long did it live?
4. How long has it been dead?
5. What was the cause of death?

As to the mother:

1. Has she been recently delivered?

1. As to the degree of development. Maturity is indicated by: size,—length, 18 to 20 in.—weight,  $6\frac{1}{2}$  lbs.; limbs plump; skin pale, covered by vernix caseosa; hair long and colored; nails long; testes in scrotum; brain firm, convolutions; bile in gall bladder; dark meconium in the intestines. These signs, alone, are of little value; together, of great.

2. Was it born alive? *The question.*

Respiration the proof of life; we can prove life in no other way. Exceptional cases.

*Proofs of Respiration:* 1. Shape of the chest. 2. Position of the organs in the thorax. 3. Color and feel of the lungs; crepitation; their absolute weight, of little value; their weight proportionably to that of the whole body,—called Plouquet's test, null. 4. Hydrostatic test: Specific gravity of lung as compared with water; great value.

*Objections:* Lungs may float from air artificially introduced. *Ans.:* Pressure will remove it.—From putrefaction. *Ans.:* The lungs resist putrefaction; it would be obvious in other parts; the air would be in large bullæ on the surface.

*Rules for the application of the Hydrostatic Test.* 1. Be sure to use pure water. 2. Try first the lungs and heart; then the lungs alone; then each lung; and then bits of each. If any float, press them and try again. Notice how rapidly they sink, or how high they float. *Note:* Respiration increases the weight and diminishes the specific gravity. Nothing else does this.

*Changes after live birth.*

In the Circulation: 1. The ductus arteriosus. 2. The ductus venosus. 3. Foramen ovale. Of little value except as cumulative proof.

Changes in the cord: Withering; desiccation; separation. Of little value. Intestines and bladder empty render still birth improbable. Test the contents of the stomach for starch and sugar; both have been found.

3. How long has the child lived? Here the state of the circulation, and of the cord, is important.

4. How long has the child been dead? The degree of putrefaction. It is rapid in infants. Causes which hasten or retard it.

5. Cause of death—natural or violent:—

*Natural Causes:* One child in about fifteen is still-born. The proportion is greater in first children and premature children. Slightly so in males. Look for intra-uterine disease; for malformation; for mis-shapen head, as proving hard labor; for proof of hemorrhage.

Don't get much more than a few small ones, but they are good  
enough to eat. I will be in a hurry to get some of them - the  
best of the year is coming in - in the spring, but the weather is  
a body will keep very long under water, but the moment it is taken  
out, it begins to puff, very fast -



*Death by Violence :—*

*a. By Suffocation.* Signs very equivocal. Livid face, congested brain and lungs, may be found, or they may not. Look for proof of the mode of suffocation: rags, &c., in the mouth; marks upon the neck or face.

*b. Exposure to cold.* Children resist cold very badly. The signs of death equivocal.

*c. By Wounds.* Usually obvious—may be concealed. A thorough post-mortem examination, which should always be made, will detect these.

*d. Fracture of the cranium.* May occur during labor, or by the child falling from the mother. Very improbable.

*Signs of recent delivery:* Debility; palor; breasts; belly; uterine tumor; relaxed vagina. These signs soon disappear: After twenty-four hours uncertain; examination after eight days, of no value. Cases illustrative.

## A B O R T I O N .

Two questions for the Medical Jurist :—

1. Has abortion taken place?
2. Was it accidental or criminal?

Qu. 1. The woman surviving, look to the signs of recent delivery as above. If dead, a thorough post-mortem examination will decide both questions. Examine the discharge; and, if anything suspicious is found, try the microscope for flocculi of the chorion.

Qu. 2. Abortion is quite common, and its causes familiar to the Obstetrician.

Abortion is commonly produced either by mechanical means or by the administration of drugs.

The mechanical means, may be external or internal violence. As to external violence: its effects are very uncertain, and it is, consequently, rarely resorted to. The common mode is by thrusting pointed instruments into the womb. Injury to the uterus or vagina very common. As to the use of drugs: Ergot is very often used, and will act if of good quality; tansy (the oil), savin, rue, cartharides; all these may produce fatal peritonitis. Careful post-mortem examination. Look to the size; vascularity, &c., of the uterus; its mucous membrane; to the tubes; ovaries; corpus luteum; its value.

## R A P E .

Definition. A child cannot give legal consent; nor one insane. Sir M. Hale's dictum as to the accusation. Large proportion of *trumped-up* cases. Medical evidence. Examine the body of the

woman. If not made early, of no value, except in a child, or perhaps a virgin. Scratches, bruises, &c., little value. Laceration of the hymen or vulva. Often absent in virgins. Absence proves nothing. Rape on children. Violence very great—illustrative cases. Or very small. Penetration and emission. Vaginitis mistaken for the signs of rape. Wood's Cases. Popular superstition. Uncertainty of diagnosis of vaginitis and gonorrhœa. The pus. Rely on two points:

1. The prisoner is proved to have had gonorrhœa.

2. The discharge appeared three to eight days after the alleged rape. Seminal stains.

Rape during sleep. Hurley's case.

#### ASPHYXIA.

That condition which results from interrupted aeration of the blood, when sensation and voluntary motion are suspended. Death results from asphyxia in drowning, strangulation, suffocation, and usually in hanging.

1. Drowning. Seven in eight cases, asphyxia; one in eight, apoplexy. Symptoms of death by drowning: Face pale, but swelling and becoming livid when taken from the water; dilated pupils; froth about the mouth (soon disappearing); tongue protruded; froth in trachea and bronchæ; water in trachea, stomach; lungs and right heart gorged; brain congested; hands grasping sand, weeds, &c.; sand under the nails; identify the weeds, also the water in the stomach. Microscope. Cases.

Collateral Questions. 1. What period of submersion will destroy life? Usually three minutes. Cases have been saved after five; and one, alleged, after fourteen. Try, by warmth and friction, to save every case within thirty minutes; though you will almost always fail after five. Begin immediately on taking the body from the water; a few minutes then lost, and all is lost. 2. Specific gravity of the human body: fat, 92; flesh, 108; bone, 200. 3. Qu. How long has the body been in the water? Proof from floating; from degree of putrefaction; formation of adipocire. May float in 24 hours, or not for ten days.

*Strangulation.* Difference from hanging. Death from asphyxia. Signs: bloated face; protruded eyes; mark on the neck; right heart, lungs, and brain congested. Signs very uncertain.

Suicide by strangulation very rare; homicide less so.

*Suffocation.* Respiration impeded by mechanical means over or in the mouth:

1. By the hand, or a plaster, or wet cloth over the mouth.
2. Covering the head with bed-clothes, &c.







3. Face plunged in bran, dust, &c.

4. Rags, &c., thrust into the mouth.

Importance of thorough examination. Symptoms of asphyxia slight. Burke & Marc's cases null. Suffocation is often accidental, in rare cases suicidal, and in children pretty often homicidal, though rare in adults.

*Hanging.* Four questions :—

1. The cause or form of death? Asphyxia in the great majority. Injury to the spine quite rare.

2. How soon does death take place? In some, instantaneous. Others five minutes or longer. Insensibility probably exists in a minute, and death creeps on.

3. Qu. Was death caused by hanging? Mark of the cord, usually depressed, ecchymosed, or condensed and parchment-like. Usually oblique, lowest in front. No mark if handkerchief, &c., used. Internal signs of asphyxia—doubtful.

4. Was the hanging accidental, suicidal, or homicidal? Cases of accidental. Suicidal very common. Homicidal rare. Position of the body proves nothing. Case from Marc.

*Gaseous Poisoning.* Usually confounded with asphyxia. Carbonic acid, sulphureted hydrogen are poisonous, and hydrogen probably so. Carbonic acid will destroy life promptly, when diluted with ten parts of atmospheric air; and much more dilute, so as to support combustion, may prove slowly fatal. Pure, cannot be inhaled.

*Note.* Carbonic acid will not remain in the lower part of a room.

*Symptoms of Poisoning:* Giddiness, loss of muscular power, sleep, coma, death. Post-mortem appearances not very characteristic; face swollen; eyes glassy.

## POISONING.

Definition, difficult. Guy's. Destructive things.

Poisons are either :

1. *Irritant* ; 2. *Narcotics* ; 3. *Narcotico Irritant*.

*Irritant poisons:* Such as inflame the stomach and bowels; some do this by mere contact; they are corrosive irritants, or the mineral acids; others have no chemical power, as arsenic; they act more slowly.

*Narcotic poisons* act on the nervous system, producing coma. Type : Opium.

*Narcotico-irritants* first act as irritants, producing pain, vomiting, &c.; then as narcotics. Type : Aconite.

*Diagnosis of poisoning.* Always suspect it when

1. Violent symptoms appear, without known cause, in a person before in health.

2. When such symptoms follow promptly, in half an hour, the taking of food or medicine.

3. Where several persons taking food together, are alike affected.

4. Symptoms progressing without relaxation. But note, that poison may be given to the sick in small quantities, affecting the patient

gradually; these effects may be modified by idiosyncracies. Attend to suspicious exacerbations.

*Duties of the Medical Jurist in cases of supposed Poisoning.*

1. The patient being alive: 1. Take full notes, and do not copy or alter them. 2. Note symptoms, exacerbations, and whether they occur after food is taken. 3. If vomiting occur, *secure* the ejecta. 4. If ejecta thrown away, secure any thing on which they have fallen. Lock up. 5. Examine the vessel in which the patient has vomited. 6. Note conduct, &c. Put down words. 7. Secure bottles, papers, &c. Keep them so that you can swear to them.

2. The patient being dead: note time and manner of death, position of the body, state of the room, &c. Make a thorough examination, and note every abnormal appearance. Tie and remove the stomach; then the intestines. Keep carefully. Examine every organ thoroughly.

3. Exhumation of bodies long buried. Note the degree of decay. Take away the stomach, bowels, liver, and spleen; or if they have matted together, take the mass. If very long buried, take some of the soil under where the stomach, &c. were, and some from near by, for comparison.

**INDIVIDUAL POISONS.** *Mineral Acids.* Sulphuric the most, and muriatic the least used. Symptoms (of each identical): Burning pain in mouth, throat, and stomach; immediately on swallowing, frothy eructations; vomiting; dyspnœa; loss of voice; pain and tenderness over the abdomen; prostration; matter vomited manifestly acid; constipation; black stools; convulsions; cold sweat; death, in from two to twenty-four hours. If the acid was diluted, symptoms less urgent, and life more prolonged—to months. Smallest quantity fatal, one drachm. An ounce has been taken without killing.

*Post-Mortem.*—Note spots on the skin. The mouth, fauces, esophagus, white and spongy as if macerated. Stomach black, perhaps eroded. Characteristics of erosion from poison. Opening large, ragged, and irregular; neighboring viscera often eroded. N.B. Ulceration from poison is rare.

*Oxalic Acid.*—Resemblance to epsom salts. Symptoms vary as the solution is strong or weak. If strong: burning pain; instant vomiting of black, or greenish, acid matter; prostration; death in from half an hour to twelve. If dilute: vomiting and pain less urgent; loss of voice; soreness of mouth, &c.; numbness, &c. Least quantity fatal, half oz.

*Post-mortem* appearances, like those from mercurial acids.

*Arsenic.*—The poison most used. Two hundred cases in Great Britain in one year.

*Symptoms:* No taste; nausea; vomiting; burning pain; thirst; cramp; purging; tenesmus; prostration; death in from three to seventy-two hours; average, twenty-four. *Note.* Symptoms do not appear for ten hours. Stools black, bloody.

Secondary effects: Eczema, palsy, hair and cuticle fall off; saliva-





tion, stranguary, conjunctivitis. In rare cases the only symptoms are prostration and coma.

*Post-mortem*: Stomach deep red or brown, with dark lines; blood under mucous membrane; ulceration rare; perforation very rare. *Note*. The stomach and bowels inflame when arsenic is applied to the skin. Smallest quantity fatal, 2 grs. Time of death from two and a half to twenty-four hours, or longer.

*Corrosive Sublimate*.—Rarely used.

*Symptoms*: Harsh metallic taste; constriction of fauces; burning pain; vomiting of white mucus, mixed with blood; tenesmus, with bloody stools; urine suppressed; face pale and anxious; prostration; cold sweat; convulsions: death in from half an hour to several days, usually one or two.

*Chronic poisoning*.—Symptoms less urgent; salivation, tremors, and paralysis, wasting away, cough, diarrhœa, dyspnœa.

*Post-mortem*: Mucous membrane of mouth, fauces, and esophagus, white; of the stomach, gray with redness below; coats of stomach lacerable; become inflamed. Quantity fatal, minimum: 3 grs.; thirty may not prove fatal.

Peculiarities of mercurial salivation: Fœtor absent in some cases; it may occur in a few hours, or not for many days. In some it cannot be produced; in others, results from the smallest quantity, especially in broken constitutions and those before salivated.

*Tartar Emetic*. Rarely used as poison; more frequently taken by mistake.

*Symptoms*: Harsh, metallic, and very persistent taste; heat and pain in fauces and stomach; vomiting, prostration, cramps. *Note*. In some cases there has been no vomiting.

*Post-mortem*: Gastric mucous membrane red; small intestines inflamed; sometimes peritonitis, or colitis, or meningetis.

Quantity fatal, minimum: ten grains.

*Acetate of Lead*. Not a violent poison.

*Symptoms* of large dose: Pain and dryness in the throat; colic; vomiting; constipation; stools black; cramp of abdominal muscles; prostration; death.

*Post-mortem*: Erosion with black spots in the stomach (a chemical action); inflammation of the bowels.

Quantity fatal, and time of death: Little is accurately known; an ounce is not always fatal.

*Vegetable Irritants*. Colocynth, gamboge, castor-oil, and the like, kill by excessive purging.

Savin, tansy, and turpentine, also produce stranguary.

*Cantharides*. Symptoms: Burning in the throat; difficult deglutition; dryness; nausea; vomiting; stranguary; inflammation of the vulva; priapism; vertigo; convulsions.

*Post-mortem* : Inflammation of the whole alimentary canal, the kidneys, ureters, and genital apparatus ; congestion of the brain.

Quantity fatal, minimum : 24 grains.

*Poisonous Food.* Mouldy bread, cheese, sausages. In most, though not all cases, is a vegetable fungus. Simple decay may be the cause. Mouldy food should always be avoided.

*Symptoms* : Irritation and rapid prostration.

Game, especially partridge, is sometimes rendered poisonous by the bird having eaten the berries of the *Kalmia*.

*Narcotic Poisons. Opium.*

*Symptoms* familiar. *Note.* Convulsions, though rare in adults, are common in children ; face hot and flushed, or pale and haggard ; sphincters relaxed ; vomiting, especially after laudanum.

*Post-mortem* : Scalp, menbrane, and substance of brain, congested ; serum in ventricles, rare ; blood, very.

Fatal quantity : Four grains have killed an adult ; very small quantities kill children,—two drops laudanum a child of five days ; four drops, one of nine months ; four grains of Dover's Powder, a boy of four years.

Period of death from three quarters of an hour (rare) to six or twelve hours.

*Prussic Acid.*

*Symptoms* : Giddiness ; oppression ; loss of muscular power ; fixed, glassy eye, remaining bright after death ; respiration slow, labored ; spasms, rare. These symptoms, even when the dose is large, are not developed instantly. Cases illustrative.

*Post-mortem* : Nothing characteristic but the odor, and it may not appear.

Period of death from three to five minutes, or longer.

Fatal dose : Any quantity over one grain.

*Narcotic Irritants. Conium a type.*

*Symptoms* : Vertigo ; impaired vision ; delirium ; convulsions ; coma ; perhaps vomiting and purging ; paralysis (partial).

*Stramonium.* Causes chorea and loss of deglutition.

*Nux Vomica. Strychnine.*

*Symptoms* : Convulsions, in paroxysms excited by the slightest causes ; with tetanic rigidity ; tremor of muscles ; suspended respiration ; intellect clear ; death during a fit, or from exhaustion ; hydrophobia.

The symptoms usually appear within fifteen minutes ; though they may not, for half an hour.

*Post-mortem* : Nothing characteristic.

Period of death, from fifteen minutes to two hours.

#### WOUNDS.

Difficult of definition. In legal phrase, the true skin must be broken. The term should include all the immediate results of external violence. Some wounds are directly and necessarily fatal. Others are







very dangerous. But *note*, a trifling wound may prove fatal, and the most severe not. Case: Wm. Brown; N. E. crowbar case. Danger is increased by

- 1st. Old age or impaired constitution.
- 2d. Habits of intemperance.
- 3d. Hemorrhagic diathesis.
- 4th. By some malformations, *e. g.* thin cranium.

*Wounds on the Living Subject:—*

1st. Note very particularly the locality, size, shape, apparent direction, immediate symptoms, age, &c. of patient.

2d. By what weapon inflicted. Does its shape answer to the weapon said to have been used. N. B. This not always so: a square foil made a triangular wound.

3d. Does the wound in shape, &c., agree with the account you get of its mode of infliction?

4th. Was it self-inflicted; and if so, was it suicidal, or a mere fraud. The latter are usually numerous, but slight; in various parts, though usually on the anterior of the body. Contusions are rare; and stabs, especially over vital parts, very. The clothes are often cut and no wound corresponds. Gunshot wounds if self-inflicted (very rarely fraudulent), present black and lacerated edges.

*Wounds on the Dead Body.*

Examine the wound without cutting into it. Look for clots; do they adhere? for swelling; for any marks of cicatrization; for foreign bodies. Make the post-mortem so thorough, that no possible cause of death shall escape you. Note the condition of the organs. Wild-berg's case of suicide in child. R. *vs.* Spicer, no food in the stomach.

*Characteristics of Wounds Inflicted before Death:* Skin and muscles retract; blood clots; clots adhere; infiltration of cellular tissue; abundant hemorrhage; arterial blood; blood sprinkled about. But *note*: The skin retracts, and blood-clots adhere, in wounds immediately after death. Hemorrhage is sometimes slight; never, however, arterial after death.

*Ecchymosis* superficial; a blue spot; may appear below the point of injury; usually, but not always, appears in a short time. Changes in ecchymosed spots. Ecchymosis may result from straining; may not follow severe blows. If very slight, may have resulted from blows after death. Query. Was the wound the cause of death? Make a thorough post-mortem in every case, however clear, that no doubt remain.

Was the wound directly fatal? This results usually from hemorrhage; destruction of some organ essential to life, or from nervous shock.

1st. *Hemorrhage* is fatal either by the quantity lost, or the blood acting mechanically, as in the brain, pluræ, &c. Eight pounds will usually kill if suddenly lost. A less amount may kill, especially feeble people. Wounds of small arteries, as the temporal, may prove fatal.

2. *Destruction of an organ essential to life*, as crushing the head, chest, &c.

3. *Nervous shock* follows apparently slight injuries. Crushing a foot; blow on the stomach; whipping, in one case, by willow wands.

*Query?* Were the wounds suicidal or homicidal? Suicidal wounds are usually in the chest or throat; rarely in the belly; usually in front; not contused. In the throat, they are usually from left to right. Stabs, from above downwards. If severe, never numerous. Put the weapon in the hand of the deceased—perhaps he could not have inflicted such a wound. Was the weapon in the hand, or far off; on which side. Case of Sellis, and Duke of York. Position of the body. Could a suicide have taken it? Is any thing (as hair, &c.), grasped in the hands.

*Detection of blood stains.* Note their exact position, direction of drops, inside or outside of clothing, finger marks. Case of bloody left hand on left arm. Test of blood. Hematocine is soluble in cold water, forming a rich red solution, which is not turned green or brown by a few drops of liq. ammoniæ; though in excess ammoniæ turns it brown. The red color is destroyed by boiling, when a dirty brown matter is precipitated. N. B. Red dyes and paints are very generally insoluble in cold water, and unchanged by boiling. Stains on clothing. Bloodspots become reddish brown in twenty-four hours; after five days there is no change.—Soak a bit of the cloth in cold water, and, if you can get an intense red color, test with ammonia and heat.

*Microscopic tests.* Soak out the blood in a solution of sugar, Sp. Gr. 1.03, and you will get the corpuscles. You cannot swear to the difference between corpuscles of man and other mammals; of fish, reptiles, and birds, you may.

*Wounds of particular parts. Of the head.* Uncertain prognosis. Apparently very slight, may cause inflammation and death; and no serious injury follow the most severe. So of scalp wounds—erysipelas may follow the slightest. Case in Green st. If vomiting follow a blow on the head there is always danger, even after months. Cases. Blows on the head are rarely suddenly fatal. Concussion and even fracture may follow a fall on the feet. Case, Duke of Orleans. Death may occur after months, or even years. Concussion and intoxication. Note the breath. Locomotion after very severe fracture of the skull and fatal injury of the brain.

*Of the heart.* Not always fatal; rarely so under forty-eight hours; one lasted sixty-seven days—Poole.

*Of the liver.* Incised wounds, if superficial, not fatal; if deep, hemorrhage destroys life. Rupture by fall or external violence. Look for fatty degeneration.

*Of the stomach.* Not always fatal. Beaumont's case. Blows fatal.

*Of the intestines.* Less grave than of the stomach. Rupture from blows, even without external mark. Look for ulceration. Shock.

*Of the urinary bladder.* Not always fatal. Rupture from blows. Spontaneous, during labor, or retention of urine.

*Of the genitals.* Very dangerous in either sex, from hemorrhage. Especial danger during pregnancy.







